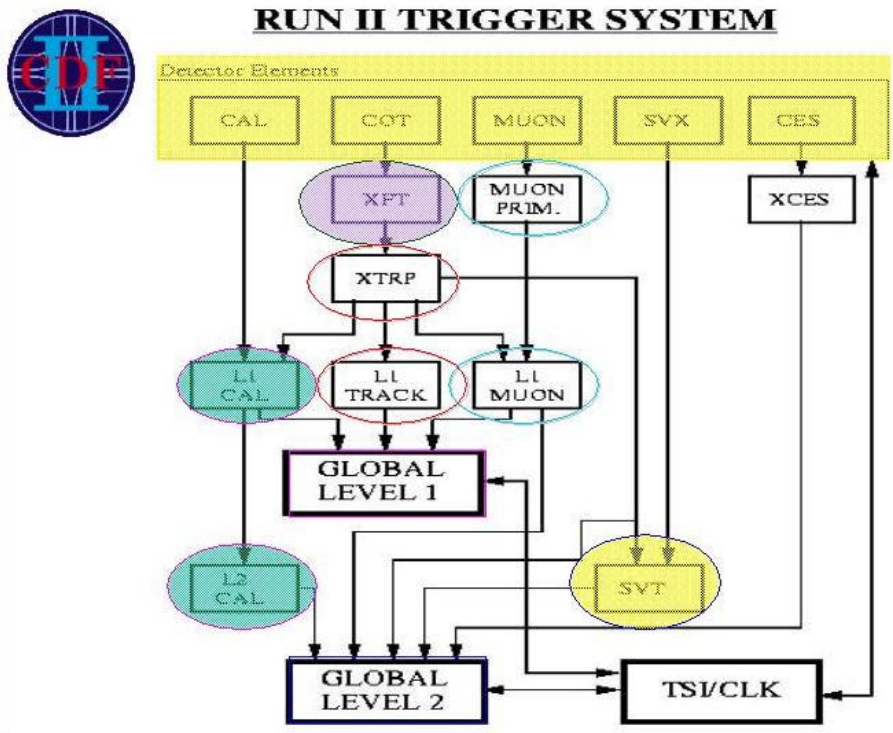
TRGSim++ status

TRGSim++ is a set of (C++) packages emulating the various trigger levels decision steps (CDF trigger is fully digital)



Trigger decision steps: A_C++ modules, organized in packages:

- CalTrigger -> CalTriggerExe
- MuonTrigger -> MuonTriggerExe
- XFTSim ->XFTTest (tbin)
- svtim -> svtsimtest (tbin)
- XTRPSim -> XTRPSimExe(tbin)
- L2GlobalTrigger ->L2Sim
- L1GlobalTrigger ->FredSim
- TriggerMods -> TRGSim++
- TriggerObjects -> trigger banks

TRGSim++ modules run off detector raw data and produce emulated trigger data identical to real hardware data.

It runs off COTQ, CalData also

Documentation and examples

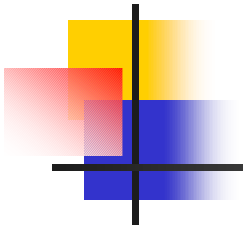
http://ncdf70.fnal.gov:8001/trigsim/trgsim.html

General Information;
Information on the code : what it does and how to run (link to most recent tcl's).

To run TRGSim++ ALWAYS go and look at the following tcl:

http://cdfcodebrowser.fnal.gov/CdfCode/source/TriggerMods/test/run_TRGSim++.tcl
http://cdfcodebrowser.fnal.gov/CdfCode/source/TriggerMods/test/run_TRGSim++_MC.tcl

This are the only tcl we constantly update for users reference



Status: CalTrigger

- Trigger Tower energies (TC2D)
- L1 DIRAC Triggers (TC1D)
- L2 clustering and Iso sums (TC2D)
- database access for trigger definition - real data
  - TriggerDB DOWNLOADS Table
  - possibility to run on simulated run with conditions from real run: in talk-to

```
use_software_CAL_banks set  t
use_xtrp  set  t
use_hardware_xtrd set f
use_hardware_L1 set  f
run_Number set 138233
```

Status XFTSim

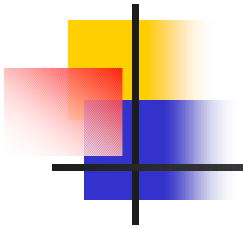
- XFT tracks :
  - XFLD and XFFD diagnostic banks
  - XTRD with track parameter
- DB access implemented
  - real run conditions applied to simulated run:
- For the Road and Mask files one can set the file types. So you can mimic exactly what was run. This is not automated so one has to do it by hand.
- Deadwires mapping from db will be added in the near future.

Status : XTRPSim

- XTRP tracks:
  - XTRD
- database access for trigger definition - real data
  - TriggerDB DOWNLOADS Table : XFT_PT
  - possibility to run on simulated run with conditions from real run: in talk-to

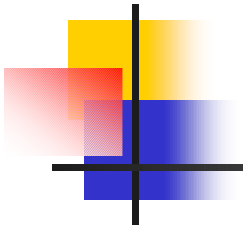
    standalone set f

    run_Number set 138233
- Also it possible to set the muon pt thresholds by hand



Status: MuonTrigger

- Muon primitives:
  - TCMD
  - Xtrapolation with XTRP done
  - database access not implemented
    - stubs thresholds hardwired - stable so far



Status: svtsim

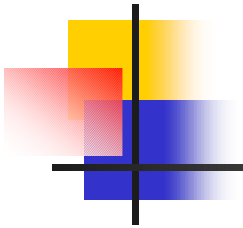
- SVT tracks:
  - SVTD
- database access implemented
  - Possibility to emulate the conditions of a give run will be implemented shortly

Status: L1GlobalTrigger

- FredSim: L1 bits
  - TFRD
- db access implemented
- database access for trigger definition - real data
  - TriggerDB DOWNLOADS Table : bits mapping
  - possibility to run on simulated run with conditions from real run: in talk-to

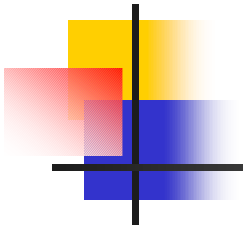
    use_simTL1D set t

    run_Number set 138233



Status: L2GlobalTrigger

- L2Sim: L2 bits + L2 quantities
  - TL2D simulated fills only:
    - cluster block
    - SVT block
  - no db access



TRGSim++

- Built as part of all the integration releases and frozen releases.
- Built nightly as part of development

To run TRGSim++ ALWAYS use the following tcl:

http://cdfcodebrowser.fnal.gov/CdfCode/source/TriggerMods/test/run_TRGSim++.tcl
http://cdfcodebrowser.fnal.gov/CdfCode/source/TriggerMods/test/run_TRGSim++_MC.tcl